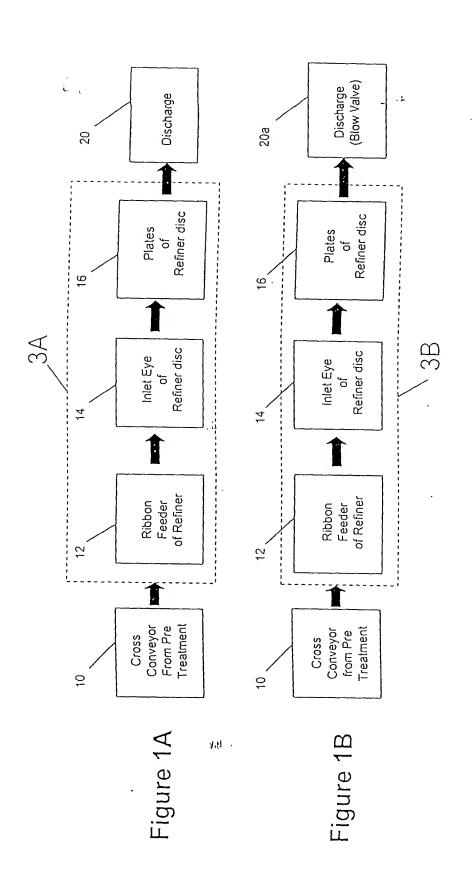


Figure 1



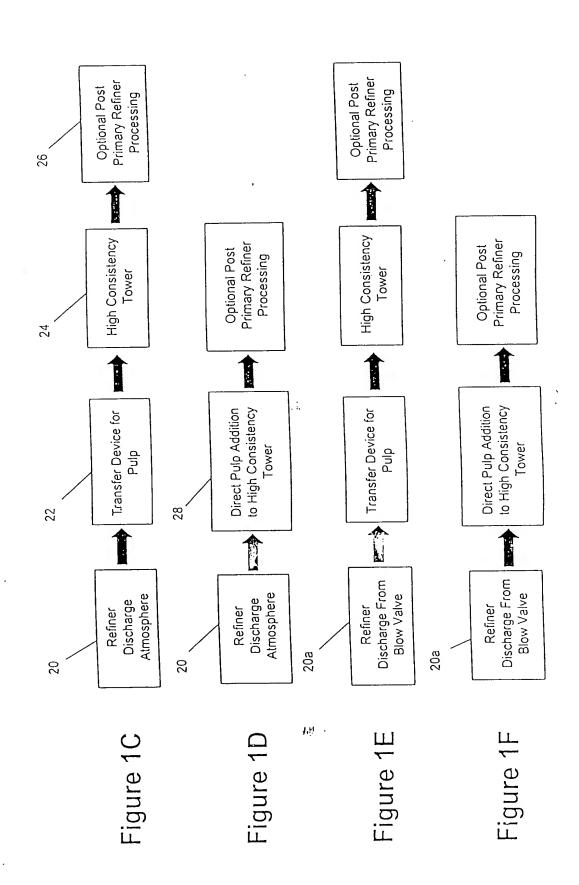
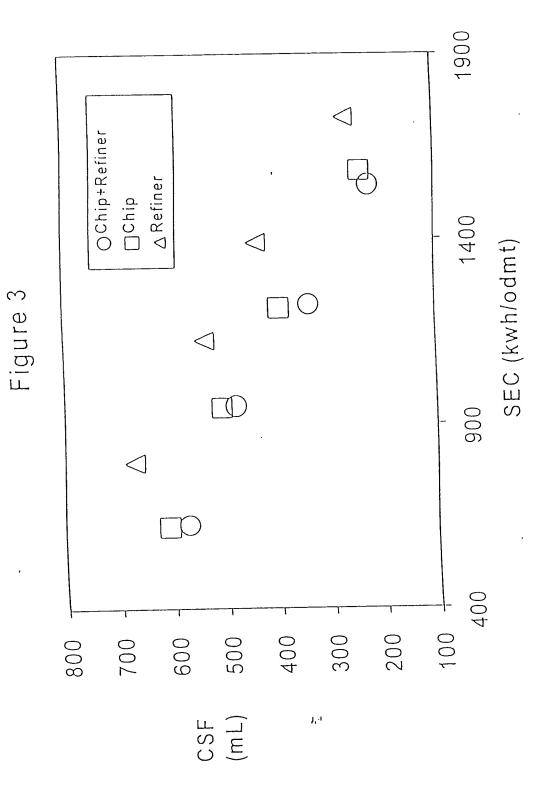
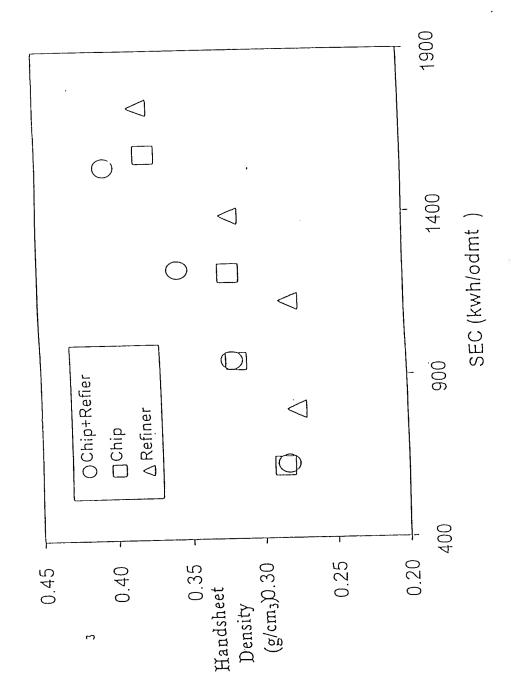


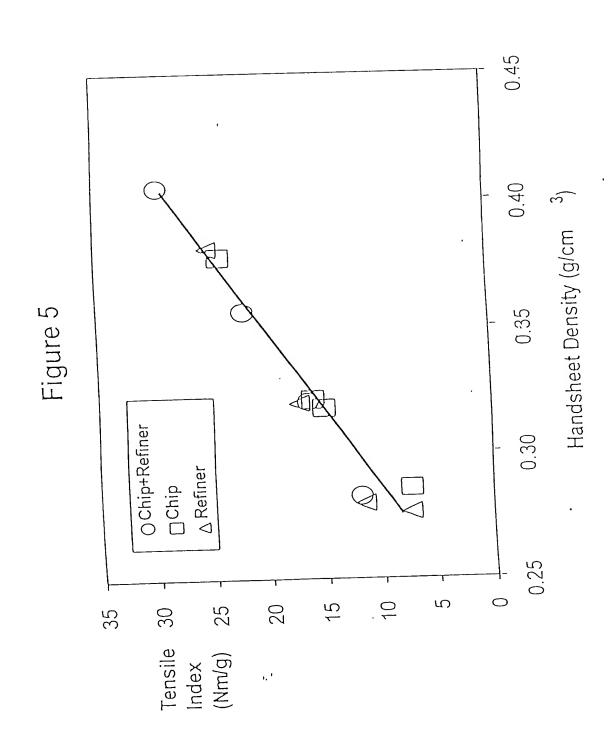
Figure 2

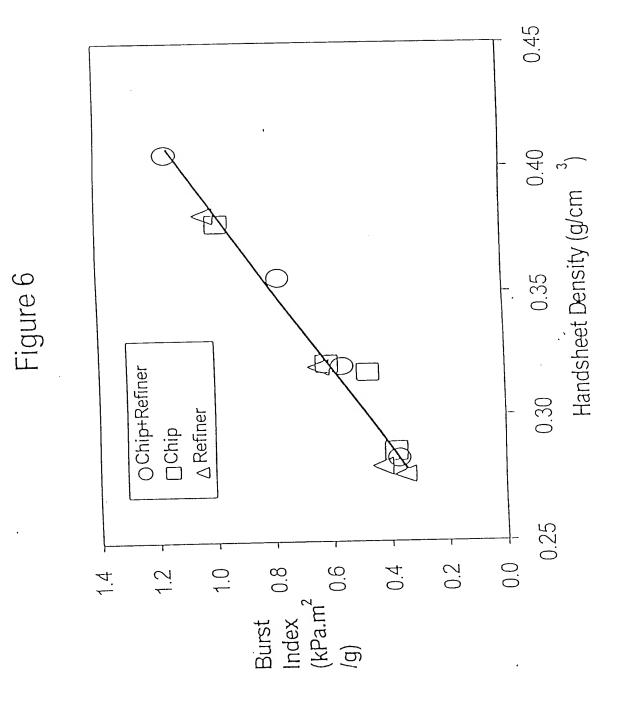
			1			-			
SAMPI F	A2	B	**	A10	A11	A12	A14	A15	A16
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Chip	Chip + Refiner			Chip		u.	Refiner	
Crem. Applica. 7. T. A		3.4			3.3			4.2	
% H <sub>2</sub> O <sub>2</sub>		5.6			2.4			3.3	
Residual:		C			0.25			0 48	
% 4505		0.23 8.2			8.6			8.2	
Total SEC (kwh/odmr)(a)	84	1223	1543	874	1181	1531	1127 -	1389	1729
رند (۱۳ مار) مرکد (۱۳ مار)	481	338	223	436	88	225	537	436	997
Ë	16.4	21.9	29.3	18.4	25.1	31.1	11.4	17.1	24.9
RITY (cm3/a)	3.13	2.81	2.47	3.16	2.78	2.51	3.58	3.13	2.63
BURST INDEX (RPa m2/g)	0.56	0.77	1.16	0.68	<u>4</u>	1.27	0.43	0.64	1.03
TEAR INDEX (mN m2/e)	2.7	3.0	4.1	3.5	3.6	4.4	2.3	2.7	3.3
T.E.A.(J/m2)	5.7	9.0	15.5	7.2	11.9	16.7	3.2	6.5	11.3
SOUNTHOISE OSI	76.8	78.0	78.3	74.6	75.2	74.6	76.7	77.5	78.1
% OPACITY	4.48	85.2	8.38	85.0	85.6	85.3	83.7		86.3
SCATT COREE (m2/kn)	50.7	53.4	57.7	49.2	52.3	52.7	48.4	53.3	57.1
18.13.11. 1.150.11.00					-				

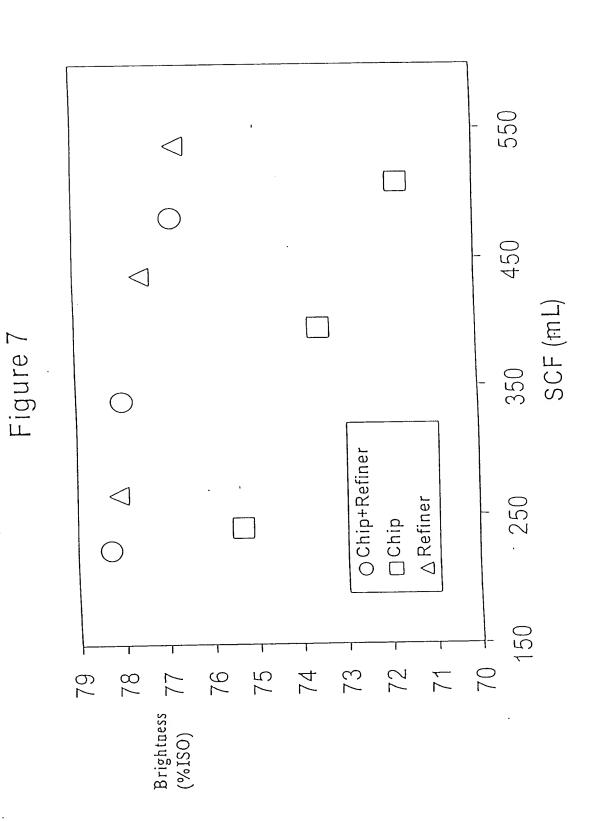
Note: a) A commercial APMP system normally useds about 70% or less SÉC than the lab.











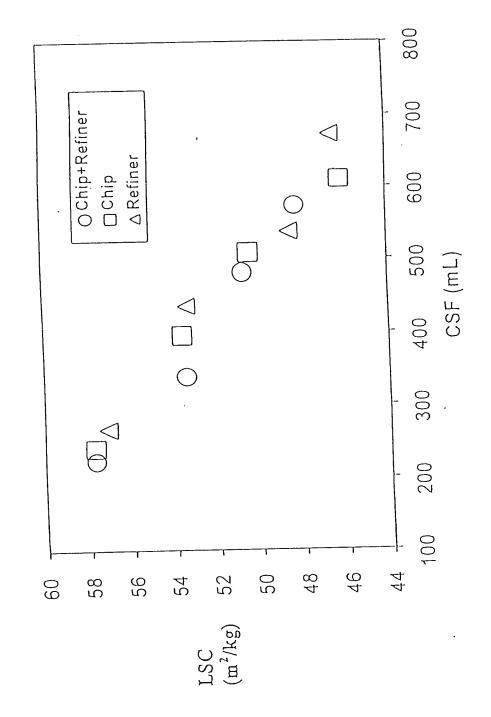


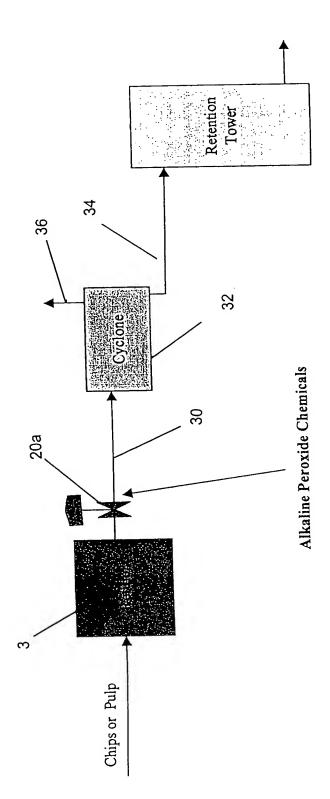
Figure 8

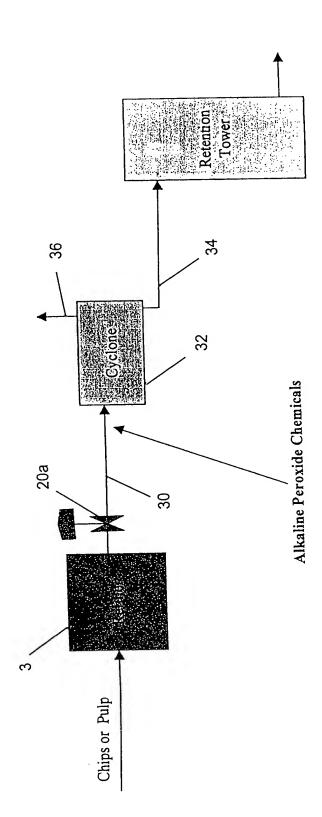
Figure 9

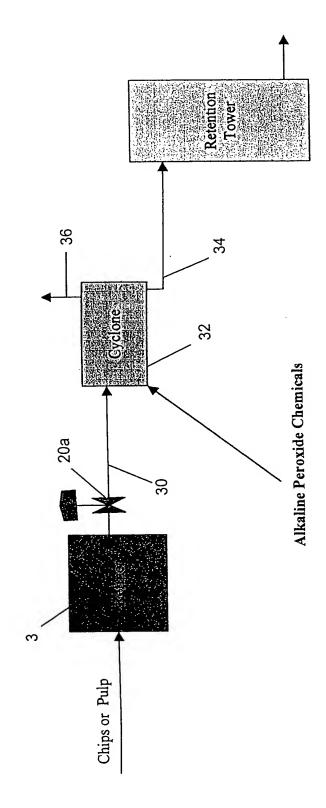
Atmospheric 0.2 3.3 3.4 0.1 0.0 1.8 2.5 2.4 0.10 84.2 8.8 0.3 0.3 3.7			Pressurized
Impregnation   0.2   3.7   3.3   3.4   0.1   0.1   0.1   0.1   0.1   0.1   0.1   0.1   0.1   0.1   0.1   0.10	roen	Atmospheric	
ge Impregnation 3.7 3.3 3.4 0.1 ssure (kPa) 1.8 2.5 2.4 0.10 84.2 al idual esidual Consumed (%) 3.7 3.7 3.8 3.4 0.1 1.8 2.4 0.10 5.2	First Stage Impregnation	0.0	0.2
ge Impregnation 3.7 3.3 3.4 0.1 ssure (kPa) 1.8 2.5 2.4 0.10 84.2 al idual essidual consumed (%) 3.7 3.7 5.2 5.4 0.10 8.8 6.3 3.7	% DTPA	7:0	
ssure (kPa)  5.3  3.4  0.1  1.8  2.5  2.4  0.10  84.2  al  idual  esidual  Consumed (%)  3.7	Second Stage Impregnation	7 %	3.9
Ssure (kPa)  5.00  5.00  5.00  6.00  7.00  7.00  7.00  7.00  8.00  8.00  8.00  9.00	%TA	· "	3.0
ssure (kPa) 0.0  ssure (kPa) 1.8  2.5  2.4  0.10  84.2  s (% ISO) 8.8  al  idual 0.3  Consumed (%) 3.7  3.7	% H <sub>2</sub> O <sub>2</sub>	י. היי	3.3
ssure (kPa)  ssure (kPa)  1.8  2.5  2.4  0.10  84.2  al  idual  esidual  Consumed (%)  3.7	% Silicate	t . C	0.1
y Refiner  Pressure (kPa)  2.5  2.4  ate  3.04  outp  residual  2.1  Residual  2.1  TA Consumed (%)  3.7	% MgSO.		
Pressure (kPa) 1.8  2.5  2.4  ate 5.04  outp sidual sidual 2.1  residual 2.1  TA Consumed (%) 3.7  Sessidual 5.2	Primary Refiner	0	140
2.5 2.4 ate SO4 ness (% ISO) Residual 1, Residual 1, Residual 1, Residual 1, Residual 2.1 TA Consumed (%) 3.7	Casing Pressure (kPa)	o. c	2.0
te  2.4  2.4  11p  11p  84.2  8.8  6ual  esidual  Residual  A Consumed (%)  3.7	%TA	٠, د	2.4
s (% ISO) 84.2 al idual esidual Consumed (%) 3.7	% H <sub>2</sub> O <sub>2</sub>	C:4 C	2.6
(% ISO) 84.2 84.2 84.2 84.2 84.2 60.3	% Silicate	F. 7	0.1
84.2 8.8 0.3 2.1 5.2 3.7	% MgSO4	21.0	
8.8 8.8 0.3 2.1 2.2 5.2 3.7	Final Pulp	C P 8	84.7
0.3 0.3 2.1 5.2 5.2 3.7	Brightness (% ISO)	પ ≪ ૦	9.0
al 2.1 umed (%) 5.2 3.7	pH Residual	) (°	0.5
al umed (%) 5.2 3.7	% TA Residual	o 	1.5
med (%) 3.2 3.7	% H <sub>2</sub> O <sub>2</sub> Residual	1.7	5.4
	Total TA Consumed (%)		3.9
	Total H,O, Consumed (%)	).(	

Figure 10

		Design C
1.54	Atmospheric	r ressui izeu
First Stage Impregnation	0.0	0.2
% DTPA	4:0	
Second Stage Impregnation	c	2.0
%TA	0.7	2.3
% H <sub>2</sub> O <sub>2</sub>	2.5	2.5
% Silicate	7.4	i c
% MgSO4	0.1	
Primary Refiner	c	140
Casing Pressure (kPa)	) <u>`</u>	3
% TA		1.7
% H <sub>2</sub> O <sub>2</sub>	o: - - -	17
% Silicate	0 -	0
% MgSO4	0.1	
Final Pulp	7 60	82.6
Brightness (% ISO)	t.70 ∞	8.0
pH Residual	0.0	0.1
% TA Residual	7.0	90
% H <sub>2</sub> O <sub>2</sub> Residùal	C. C	3.5
Total TA Consumed (%)	5.1	7 6
Total H,O, Consumed (%)	0.0	

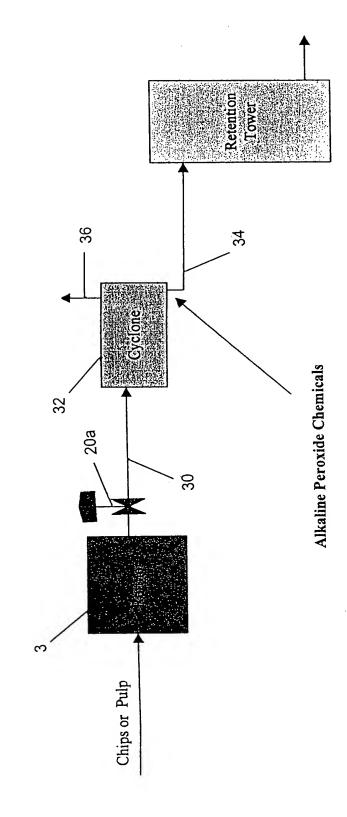






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Figure 14



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FIGURE 15

Results from Birch and Maple	Birch		Maple	ole
Wood Dosing Point	Refiner Eye	Blow Line A2	Refiner Eye A3	Blow Line A4
Sample No.				
Conditions at Primary Refiner	¢	C	0	0
Pressure at Inlet (Bar) Pressure in Casing (Bar)	1.4	1.4	1.4	1.4
	710	0.16	0.13	0.13
% DTPA	0.10	0.16	0.13	0.13
% MgSO4	2.73	2.3	2.5	2.5
% Silicate	(5 () 8 (	1.8 (0.5)	1.2 (0.1)	1.2 (0.1)
% TA (Residual)	(0.0) 9.1	2.4 (1.1)	2.1 (1.8)	2.1 (2.1)
% H <sub>2</sub> O <sub>2</sub> (Residual)	0.1) +.7	0.6	7.4	7.6
Final pH	200			
Final Pulp Properties		6.70	707	81.9
Brightness (% ISO)	84.8	84.2 0.25	0.5	0.32
Light Absorption Coefficient (m /kg)	285	315	320	295
Freeness (ml)				

Red Pine 1.2 (0.5) 1.9 (1.1) 8.1 0.2 0.06 2.0 71.2 1.01 82 R. E. A7 1.1 0.9 (0.2) 1.2 (1.7) 9.1 78.8 0.56 47 0.22 B.L. A6 Spruce 0.8 (0.1) 1.2 (1.3) 8.7 78.2 0.60 49 0.22 0.11 R.E. Table 2. Results From Different Softwoods Final Pulp Properties
Brightness (% ISO)
Light Absorption Coefficient (m²/kg)
Freeness (ml, CSF) Conditions at Primary Refiner Pressure at Inlet (Bar) Pressure in Casing (Bar) % TA <sup>a</sup> (Residual) % H<sub>2</sub>O<sub>2</sub> (Residual) Final pH Dosing Point Sample No. % DTPA % MgSO<sub>4</sub> % Silicate Wood

1.2 (0.1) 1.8 (1.1) 8.1

0.18

1.8

B. L. A8 71.8 0.84 99

FIGURE 17

good Blend Under Elevated Pressure At Primary Refiner.

Table 3, Results From Softwood Blend Under Elevated Fressure At Filling 1) Neillies.	der Elevated Fressure At	rimary neimer.
Dosing Point	Refiner Eye	Blow Line A10 <sup>a</sup>
Sample No.		
Conditions at Primary Refiner		,
Pressure at Inlet (Bar)	2.1	4. A
Pressure in Casing (Bar)	1.7	ĵ.
% T.♦	1.7	1.7
% H <sub>2</sub> O <sub>2</sub> (Residual)	2.8 (1.1)	2.8 (1.1)
Final pH	7.6	C./
Final Pulp Properties	7 72	73.4
Brightness (% ISO)	/3./	4:6/ 900
Light Absorption Coefficient (m*/kg)	11	6.7
Freeness (ml)	1+	16

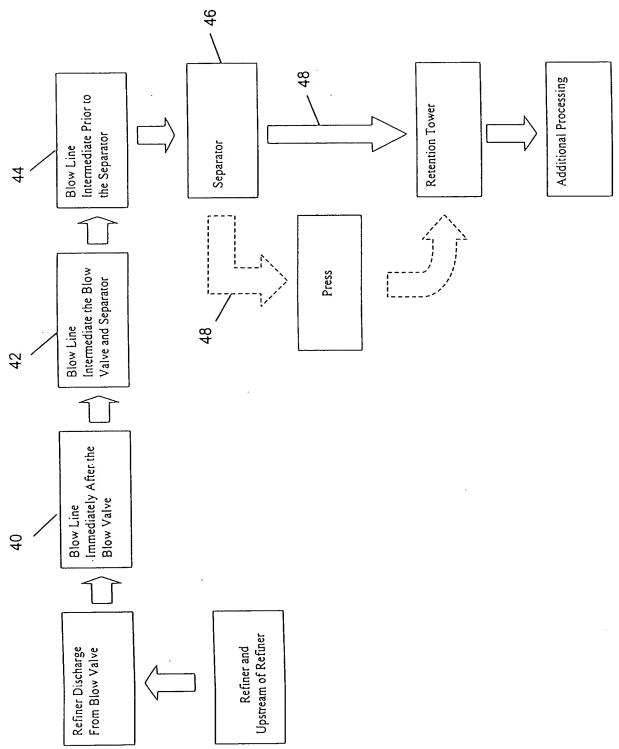


FIGURE 18